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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,547	11/27/2006	Jinsong Zhou	31,022 USA	3610

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SYNNESTVEDT & LECHNER, LLP
1101 MARKET STREET
26TH FLOOR
PHILADELPHIA, PA 19107-2950

EXAMINER

DUFF, DOUGLAS J

ART UNIT	PAPER NUMBER
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3748

MAIL DATE	DELIVERY MODE
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09/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/556,547

Applicant(s)

ZHOU ET AL.

Examiner

Douglas J. Duff

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 21-38 is/are rejected.
- 7) ☒ Claim(s) 24,30,34 and 37 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 24, 30, 34 and 37 are objected to because of the following informalities: "the frame", "the sheet", "each metal base plate" and "the metal base plate" lack antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 21-25 and 34-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Suefuji et al. (US 4802831). Regarding claim 21, Suefuji et al. disclose a scroll (Fig. 1) comprising an orbiting spiral (5b) and a stationary spiral (4b) each composed of a spiral body and a corresponding base plate (50, 4a), characterized by using of elastic or plastic material (5b', 5c, Fig. 4), or elastic and plastic material for making either or both the spirals, and making use of the elasticity or plasticity of such material to decrease the unevenness of the contact surface of these two spirals (4, 5) and increase the contact surface area by deformation of the material (Fig. 4) caused by squeezing upon orbiting of the orbiting spiral (5) around the stationary spiral (4) so as to provide a sealing effect between two contact surfaces of these two spirals and a mutual axial and radial compensating effect during orbiting (Figs. 1 and 4).

4. Regarding claims 22-25, Suefuji et al. disclose the scroll in claim 21 wherein either or both of the orbiting spiral and the stationary spiral are made of elastic or/and plastic material (5c), the elastic or plastic material is polytetrafluoroethylene, polyurethane or synthetic rubber (col. 9, lines 41-44), the surface of the frame of either or both of the orbiting spiral and the stationary spiral is coated with elastic or/and plastic coating material (col. 9, lines 41-44, Fig. 4), the frames of the orbiting spiral and the stationary spiral are formed with a plurality of through or blind pores to increase the bond strength of the said coating material (surface roughness, col. 10, lines 29-35).
5. Regarding claims 34-38, Suefuji et al. disclose a scroll manufacture method characterized by forming of a frame for spiral body on each metal base plate by molding (Fig. 10); and coating the frame and the metal base plate with elastic material (Figs. 4 and 9), or forming thereon a plastic layer by molding (Fig. 10), the metal base plate and the frame for the spiral body are formed as an integrated part by molding (Fig. 10), forming of the scroll on the metal base plate with elastic material by molding (Fig. 10), the said elastic material is either polytetrafluoroethylene, or polyurethane or synthetic rubber (col. 9, lines 41-44).
6. Claims 26 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakata et al. (US 4875839). Regarding claim 26, Sakata et al. disclose a scroll manufacture method characterized by making spiral bodies with sheet (18, 24); fixing each spiral body to a metal base plate (16, 22); and coating the outer surface of each spiral body and the bottom of each metal base plate contacting with the spiral body with

an elastic material or forming thereon a plastic layer (wrap) by molding (col. 3, lines 16-18).

7. Regarding claim 28, Sakata et al. discloses the scroll manufacture method of claim 26 including the sheet being sheet metal or plastic sheet (resin plastic, Fig. 1).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 27 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. in view of Suefuji et al. Regarding claim 27, Sakata et al. discloses the method of claim 26, but fails to disclose a plurality of pores.

10. Suefuji et al. teaches a method of manufacture of a scroll wherein the scroll contains a plurality of pores (col. 10, lines 29-35). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a plurality of pores on the scroll in order to improve the adhesive strength between the base member and the resin coating layer (col. 10, lines 32-35).

11. Regarding claim 29, Sakata et al. disclose the method of claim 26, but fails to disclose a coating made of rubber. Suefuji et al. teach a method of scroll manufacture with a coating made of synthetic rubber (elastic resin, col. 9, lines 41-44, Fig. 4). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a coating of rubber in order to provide high dimensional

Art Unit: 3748

precision, wear resistance, fatigue strength and adhesive strength to the metal material (col. 1, lines 45-62).

12. Regarding claim 30, Sakata et al. discloses a scroll manufacture method with the steps of making spiral bodies (18, 24), fixing each spiral to a base plate (16), but fails to disclose coating the sheet with an elastic material.

13. Suefuji et al. teaches coating a sheet of a scroll with an elastic material (Fig. 4). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a coating of an elastic material on the sheet (spiral) of a scroll in order to provide high dimensional precision, wear resistance, fatigue strength and adhesive strength to the metal material (col. 1, lines 45-62).

14. Regarding claims 31-33, the modified Sakata et al. discloses the method of claim 30 including the sheet formed with a plurality of pores (roughness, col. 10, lines 29-35), the sheet is a metal or plastic sheet (5b-1, Fig. 4) and the elastic material is synthetic rubber (elastic resin, col. 9, lines 41-44).

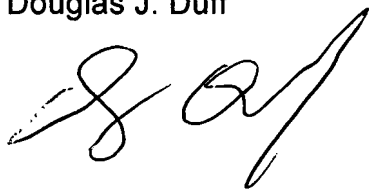
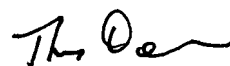
Art Unit: 3748

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Duff whose telephone number is (571) 272-3459. The examiner can normally be reached on M-F 7 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Douglas J. Duff


9/12/07
THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700